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AB0143

THE EFFECT OF RHEUMATOID ARTHRITIS AND SPONDILOARTHRITIS ON PREGNANCY: A LONGITUDINAL RETROSPECTIVE COHORT STUDY

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Background: Many patients with rheumatoid arthritis (RA) and spondyloarthritis (SpA) are in their childbearing years. Concerns exist regarding the interplay between the rheumatic diseases and the pregnancy (1).

Objectives: Actually, there are contradictory data regarding the pregnancy outcome in patients with RA and SpA (2). Thus, we performed this longitudinal retrospective study to evaluate the effect of RA and SpA on pregnancy outcome.

Methods: The data of 78 pregnancies of 60 women followed from April 2017 to December 2020 at pregnancy clinic of Internal Medicine Unit, San Bortolo Hospital, Vicenza and Rheumatology Unit, University of Verona were reviewed. Fifty (64.1%) women were affected by RA and 28 (35.9%) by SpA. Information regarding demographic data, disease activity, drug exposure and maternal/foetal outcomes were collected in an electronic database. Details concerning pregnancy complications and congenital malformation were also collected. We compared pregnancy and foetal/neonatal outcome, medication use and disease activity between women affected by RA and SpA. Moreover, we evaluated the effect of disease activity on pregnancy outcome.

Results: Overall, there were 70 (86.4%) live births, 10 (12.3%) miscarriages and 1 (1.2%) foetal death. There were three twin pregnancies. Even there was a higher rate of glucocorticoids and bDMARDs use in RA than in SpA group, respectively 40% vs 21% and 70% vs 57.1%, there were no statistical differences regarding drug exposure at conception. Moreover, there were no differences concerning disease activity at conception. Still, a higher rate of glucocorticoids and bDMARDs, respectively 26% vs 10.7% and 46% vs 39.3% were used in RA than in SpA patients during pregnancy. Furthermore, we did not find any statistical differences regarding maternal and foetal/neonatal outcome between pregnancies in the RA and those in the SpA groups. There were four (4.9%), congenital malformation, two (3.8%) in RA group and two (6.9%) in SpA group. About one-third of patients 24 (30.7%) presented a moderate disease activity at conception as evaluated by DAS28PCR and BASDAI. However, there were no significant differences, on maternal and foetal/neonatal outcome in patients with moderate activity disease with respect of those in clinical remission.

Conclusion: Even a higher rate of glucocorticoids and bDMARDs were used in RA than in SpA patients, there was no differences on pregnancy outcome between them.

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AB0144

PREDICTIVE FACTORS OF SUSTAINED CLINICAL REMISSION IN RHEUMATOID ARTHRITIS

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Background: Sustained remission (SR) is an ultimate treatment goal in the management of patients with rheumatoid arthritis (RA) (1) and is associated with better RA prognosis, reflected by the quality of life, physical function and radiographic progression (2).

Objectives: To investigate the prevalence and predictors of SR in RA patients.

Methods: A longitudinal prospective study of patients with RA. At the inclusion, the patients were in remission DAS28 ESR₁ ≤ 2.6 for at least 6 months. A B-mode and power doppler (PD) ultrasound of 42 joints and 20 tendons was performed. Synovial hypertrophy (SH) and tenosynovitis in B-mode and PD were defined and scored from 0 to 3 using the OMERACT. The CDAI, SDAI, Boolean remission criteria, the health assessment questionnaire (HAQ) and the radiological Sharp score were calculated. Then, the DAS28 erythrocyte sedimentation rate (ESR) was evaluated

at 6 and 12 months. SR was defined as the persistence of a DAS28 ESR₁ ≤ 2.6 at 6 or 12 months without any change in RA therapy during the follow-up. Unstable remission (UR) was defined either as DAS28 ESR₁ > 2.6 at 6 or 12 months or an increase in RA therapy because of a relapse during the follow-up.

Results: At baseline, thirty-seven patients were included. At 6 and 12 months, 28 and 24 patients completed follow-up, respectively. In decreasing order, Boolean remission (92.2%), DAS28 ESR₁ remission (85.7%), SDAI remission (85%) and CDAI remission (83.3%) achieved SR at 6 months. At 12 months, SR was found in 100% in Boolean remission, 87.5% in SDAI remission, 86.7% in CDAI remission and in 79.7% in DAS28 ESR₁ remission. At 6 months, only the ESR (17mm/1h in SR versus 32mm/1h in UR, p=0.04) was associated with SR. The disease duration, remission duration, swollen and tender joints, DAS28 ESR₁, HAQ, rheumatoid factor, radiological Sharp score and ultrasound parameters weren't associated with SR. At 12 months, the squeeze test (15% in SR vs 80% in UR, P=0.01), the ESR (15mm/1h in SR versus 30mm/1h in UR, p=0.03), the Boolean remission (61.1% in SR versus 0% in UR, p=0.04) and the DAS28 ESR₁ (mean: 1.8 in SR versus 2.5 in UR, P=0.01) were associated with SR. However, no association was found with radiological Sharp score and ultrasound parameters. On multivariate analysis, the ESR (OR=1.13, CI95%=1.01-1.2, p=0.03) and the Squeeze test (OR=21.3, CI95%=1.7-263, p=0.01) were predictors of SR, at 12 months. **Conclusion:** At 6 and 12 months, 79.7%-85.7% of patients in DAS28 ESR₁ remission achieved sustained remission, respectively. Boolean and DAS28 ESR₁ remission were associated with SR. Unlike DAS28 ESR₁, Boolean remission seems to reflect more the SR. The squeeze test and the ESR were predictors' factor. However, the radiological and the ultrasound parameters didn't show any association.

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AB0145

SMARTPHONE- AND SMARTWATCH-ACQUIRED DAILY STEPS, ACTIVITY, AND BAROMETRIC PRESSURES ASSOCIATED WITH SUBJECTIVE MEASURES OF RHEUMATOID ARTHRITIS: A PROSPECTIVE STUDY FOR RA DIGITAL PHENOTYPING

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Background: Symptoms in patients with rheumatoid arthritis (RA) are potentially influenced by exercise load and meteorological change, and often vary from day to day, especially in unstable condition of RA. Patients with RA not infrequently experience worsening of joint symptoms when the load on the joint, such as walking and doing housework, exceeds a moderate range. However, the worsening of joint symptoms is often not observed in the midst of the loading of the joint, but often becomes apparent after a few hours or days.

Objectives: To elucidate the relationship between smartphone- and smartwatch-acquired daily objective data (barometric pressures, steps, and activity) and daily subjective patient reported outcomes of RA.

Methods: A smartphone (iPhone 8) and a wristband-type smartwatch (Fit-bit Versa 2) were lent to each patient for free. A mobile app was developed and installed into the smartphones to collect patients' daily subjective RA symptoms including Pt-P-VAS (patient-pain-visual analogue scale), Pt-G-VAS (pt-general-VAS), PtTJCCount(68)(patient self-determined tender joint count among 68 joints), PtTJCCount(28), PtSJCount(66)(patient self-determined swollen joint count among 66 joints), PtSJCount(28). Also, the smartwatch data and physicians' assessment were collected from the same subject. Physicians' and patients' assessment of TJC, SJC, and G-VAS was independently performed without seeing each other's assessment. We conducted a simple linear regression analysis with outcome variables of Pt-P-VAS, Pt-G-VAS, PtTJCCount(68), PtTJCCount(28), PtSJCount(66), and PtSJCount(28). The independent variables included smartphone-acquired daily steps and barometric pressure of the reported day and the previous day, and smartwatch-acquired minutes of "lightly active (1-3 METs equivalent)", "fairly active(3-6 METs equivalent)", and "very active(>6 METs equivalent)" of the reported day and previous day. We defined low barometric pressure as below 1000 hPa. The level of activity was measured by the smartwatch. Patients were blinded to daily barometric pressure data and their daily active time when the patients answered daily symptom questions on the smartphones.